



COMMONWEALTH of VIRGINIA

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Comments on the Interior Department's Draft Proposed Outer Continental Shelf (OCS) Oil and Gas Leasing Program 2010-2015 and Notice of Intent to Prepare an Environmental Impact Statement DEQ-09-010F

DESCRIPTION OF THE PROPOSED ACTION

The MMS has requested comments from states, local governments, Native groups, tribes, the oil and gas industry, federal agencies, environmental and other interest organizations, and all other interested parties on the agency's Draft Proposed OCS Oil and Gas Leasing Program 2010-2015 (DPP) document. Comments will be used by MMS to assist in the preparation of a 5-year OCS oil and gas leasing program for 2010-2015 and an EIS. The proposed lease sale program areas in the draft document (including lease sale 220 off the Virginia coast) warrant further study and analysis based on oil and gas resource estimates and comments received in response to the MMS August 1, 2008 Request for Information. DEQ conducted a coordinated scoping process on behalf of the Commonwealth and submitted a scoping response (DEQ 08-171F) to the MMS request on September 11, 2008. The response below largely consists of the comments submitted in response to MMS's 2008 scoping request.

The MMS will also evaluate prospective alternative energy projects on the OCS during the period of 2010 to 2015. MMS will consider the potential interaction between alternative energy projects and potential oil and natural gas leasing activities in the 2010-2015 5-Year Program. The inclusion of areas in the draft proposed lease sale schedule provides a basis for gathering information and conducting analyses to inform policy makers whether to include these areas for leasing consideration in the new 5-year program. Future required steps following this notice include the development of a proposed program, a proposed final program, and Secretarial approval. Pursuant to the National Environmental Policy Act (NEPA), the MMS also will prepare an EIS for the new 5-year program.

The following state agencies and regional planning district commission joined in this review of the notice, and will be solicited in our later review when a National Environmental Policy Act (NEPA) document is submitted by MMS:

Department of Environmental Quality
Virginia Marine Resources Commission
Department of Mines, Minerals and Energy

Department of Agriculture and Consumer Services
Department of Health
Department of Historic Resources
Department of Transportation
Hampton Roads Planning District Commission

In addition, the following agencies and planning district commissions were invited to comment, and will be invited again when the final leasing plan is developed and the NEPA document is made available:

Department of Conservation and Recreation
Department of Game and Inland Fisheries
Virginia Institute of Marine Science
Virginia Port Authority
Accomack-Northampton Planning District Commission

DISCUSSION OF INFORMATION REQUESTED BY MMS

Draft Program Plan

MMS requests comments on the size, timing, and location of leasing and the procedures for assuring fair market value that are proposed in the DPP. MMS also invites comments and suggestions on how to proceed with the section 18 analysis for the next draft of the new proposed program.

1. Forecast National Energy Needs. According to the DPP (page 71), MMS expects high and volatile energy prices and continued dependence on foreign energy, especially for crude oil, raise important energy policy issues about energy supply options and their effects on the economy and the environment.

1(a) Comments. The Commonwealth of Virginia is cognizant of the national need for energy independence. Accordingly, Virginia legislation established an energy policy for the Commonwealth and directed the Department of Mines, Minerals and Energy (DMME), in consultation with the State Corporation Commission, Department of Environmental Quality, and Virginia Center for Coal and Energy Research, to prepare a ten-year comprehensive Virginia Energy Plan (VEP) to implement the Commonwealth's energy policy. Virginia Code § 67-300 states *"In recognition of the need for energy independence, it shall be the policy of the Commonwealth to support federal efforts to determine the extent of natural gas resources 50 miles or more off the Atlantic shoreline, including appropriate federal funding for such an investigation. The policy of the Commonwealth shall further support the inclusion of the Atlantic Planning Areas in the Minerals Management Service's draft environmental impact statement with respect to natural gas exploration 50 miles or more off the Atlantic shoreline."*

2. Regional Energy Considerations. According to the DPP (page 80), the western part of the U.S. produces more hydrocarbons than it consumes while the opposite is

true for the eastern U.S. The Gulf Coast and West Coast produce much more than is consumed while the East Coast has only a small amount of production and the greatest overall energy consumption.

2(a) Comments. The Department of Mines, Minerals and Energy (DMME) reiterates its previous comments which were included in the Commonwealth's October 6, 2005 scoping comments on the Interior Department's 5-Year OCS Gas and Oil Leasing Program for 2007-2012 (reviewed under DEQ-05-230F). According to DMME, the Atlantic coastal states include major energy markets, accounting for 22% of U.S. natural gas consumption and 31% of petroleum product consumption annually. In Virginia, most energy use is in coastal areas. Some of these areas have experienced natural gas supply constraints in the recent past, due to distance from source areas and inadequate pipeline infrastructure. Development of natural gas resources near these markets would reduce supply disruptions and transportation costs, and reduce the risk of transportation-related accidental discharges.

Scoping Comments for the Preparation of the Environmental Impact Statement

Pursuant to section 102(2)(C) of NEPA, MMS intends to prepare an EIS for the new 5-year OCS oil and gas leasing program for 2010–2015. The January 2009 *Federal Register* notice started the formal scoping process for the EIS under 40 CFR 1501.7, and solicits information regarding issues and alternatives that should be evaluated in the EIS. The EIS will analyze the potential impacts of the adoption of the proposed 5-year program.

1. Air Quality. The DPP (page 84) states that no substantive degradation of onshore air quality should take place. Emissions associated with routine offshore activities could cause small increases in onshore concentrations of some air pollutants, but will not result in new exceedances of national or state air quality standards.

1(a) Agency Jurisdiction. DEQ's Air Quality Division, on behalf of the State Air Pollution Control Board, is responsible to develop regulations that become Virginia's Air Pollution Control Law. DEQ is charged to carry out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the State are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

1(b) Agency Comments. According to the DEQ Air Quality Division, Hampton Roads is an ozone (O₃) maintenance area and an emission control area for the contributors to ozone pollution, which are volatile organic compounds (VOCs) and nitrogen oxides (NO_x). Therefore, all reasonable precautions should be taken to limit emissions of VOCs and NO_x. Land-based activities may be subject to controls on fugitive dust emissions under 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution* and open burning requirements under 9 VAC 5-130 *et seq.* of the *Regulations*.

2. Wildlife. According to the DPP (page 85), although some marine mammals could be harmed during OCS activities, no permanent change in the population of any species is expected to take place. In most cases, impacts to marine mammals from activities associated with the proposed program should not be lethal.

2(a) Fish and Wildlife Resources. The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts. For more information, see the DGIF website at www.dgif.virginia.gov.

2(b) Agency Comments. As previously provided to MMS in 2008 in response to the request for scoping comments, the Department of Game and Inland Fisheries (DGIF) notes that Virginia's coastal plain and nearshore and offshore waters represent some of the most pristine coastal and marine habitats along the Atlantic coast. Below is a brief overview of the rich diversity of wildlife resources found within Virginia's portion of the OCS planning area.

Aquatic Species

Virginia's nearshore and offshore waters likely support seasonal or year round occurrences of federally-listed threatened loggerhead sea turtles (*Caretta caretta*), federally-listed endangered Kemp's Ridley sea turtles (*Lepidochelys kempii*), federally-listed threatened green sea turtles (*Chelonia mydas*) and federally-listed endangered leatherback sea turtles (*Dermochelys coriacea*). Additionally, oil and gas drilling leases may fall within the ranges of several marine mammal species including the federally-listed endangered northern right whale (*Balaena glacialis*), the federally-listed endangered humpback whale (*Megaptera novaeangliae*), the federally-listed endangered sei whale (*Balaenoptera borealis*), and the federally-listed endangered fin whale (*Balaenoptera physalus*).

The nearshore and offshore waters off the Virginia's southern mainland beaches (Fort Story south to the VA/NC state line) likely support seasonal or year round occurrences of loggerhead, Kemp's Ridley, green and leatherback sea turtles along with a wide variety of marine mammals including the Florida manatee (*Trichechus manatus latirostrus*). Additionally, a bottlenose dolphin (*Tursiops truncatus*) nursery area located off of Fort Story. Virginia represents the northern extreme of the loggerhead sea turtle breeding range with most of the annual nesting activity confined to southern mainland beaches where as many as seven nests have been recorded in a single nesting season. In 2005, the state's first green sea turtle nest was documented at Sandbridge just north of Back Bay National Wildlife Refuge.

Avian Species

Oil and gas drilling leases may occur within important migration and wintering habitats for red phalaropes (*Phalaropus fulicaria*), red-necked phalaropes (*Phalaropus lobatus*), and a variety of seabirds and sea ducks. Lastly, millions of migratory landbirds (passerines and raptors) funnel through the lower Delmarva Peninsula each fall making it one of the most important staging areas along the Atlantic flyway. To date, little is known about landbird occurrences over Virginia's nearshore and offshore waters. However, various radar studies suggest that some fall migrants may follow offshore flight paths. It is possible these offshore flight paths may intersect with oil and gas drilling leases.

Wildlife Migration

The mid-Atlantic coastal region is a globally significant area for migration of birds, sea turtles, and marine mammals. The Eastern Shore, in particular, provides breeding grounds and stopover points for federal- and state-listed sea turtles and shorebirds. Therefore, it is important to understand how the construction and operation of facilities related to oil and gas exploration, development, and production may impact these species and the resources upon which they depend.

2(c) Threatened and Endangered Plant and Insect Species. The Endangered Plant and Insect Species Act of 1979, Chapter 39, §3.1-102- through 1030 of the *Code of Virginia*, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. The VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the U.S. Fish and Wildlife Service, DCR DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by the U.S. Fish and Wildlife Service, are available, adherence to the order and tasks outlines in the plans are followed to the extent possible.

VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a

Memorandum of Agreement established between VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species.

2(d) Agency Comments. At this time, VDACS does not anticipate that the proposed action will have a significant adverse effect as it relates to the agency's responsibilities for the protection of listed endangered and threatened plant and insect species.

2(e) Recommendations. The Department of Game and Inland Fisheries recommends that further research be performed to determine what impacts upon wildlife species may result from offshore oil and gas exploration and development.

DGIF recommends that, prior to lease sales and exploration, studies be performed to determine the current species assemblage within the proposed mid-Atlantic leasing blocks (particularly threatened and/or endangered species) and use of these areas by wildlife, both resident and migratory. The collection of pre-construction and exploration data will provide a baseline upon which the exploration, development, and operational impacts can be evaluated. These studies may also provide insight on the most effective way to mitigate for impacts. DGIF has identified the following items as those for which the agency believes further research is particularly warranted.

1. Effects of gas and oil exploration, drilling and production activities on wildlife resources that occur on Virginia's barrier islands and southern mainland beaches.
2. Construction and operation impacts of offshore and land-based gas and oil exploration and production infrastructure (e.g., installation and operation of pipelines used to transport gas from the offshore platform to land, construction and operation of drill platforms, drill ship anchoring systems) on marine and terrestrial environments.
3. Oil, trash, and other harmful materials stemming from gas and oil drilling operations entering the ocean environment.
4. Oil, trash, and other harmful materials stemming from gas and oil drilling operations washing ashore on the barrier islands and/or entering the seaside lagoon system.
5. Impacts of large vessel traffic on sea turtles and marine mammals.
6. Impacts of offshore lighting (above- and under-water) on marine organisms such as sea turtles, marine mammals, fish, aquatic prey species, birds, etc.
7. Impacts of decommissioning and removing gas and oil production structures on the marine environment.
8. Cumulative impacts of oil and gas drilling activities and alternative offshore energy development.
9. Overall impacts to newly established marine sanctuaries.

Sources for information about Virginia's coastal resources as compiled by DGIF are listed below. DGIF recommends that these sources be consulted in preparation of the EIS for the 5-year program.

1. Onshore, nearshore and offshore movements of migratory landbirds –Bryan Watts, Center for Conservation Biology at the College of William and Mary (bdwatt@mail.wm.edu) and Barry Truitt, The Nature Conservancy (btruitt@tnc.org).
2. Offshore distribution, abundance and movement patterns of seaducks – Doug Forsell, US Fish and Wildlife Service (doug_forsell@fws.gov) and Gary Costanzo, VDGIF (gary.costanzo@dgif.virginia.gov).
3. Onshore, nearshore and offshore movements of migratory shorebirds – Bryan Watts, Center for Conservation Biology at the College of William and Mary (bdwatt@mail.wm.edu), Barry Truitt, The Nature Conservancy (btruitt@tnc.org) and Ruth Boettcher, VDGIF (ruth.boettcher@dgif.virginia.gov).
4. Offshore distribution, abundance and movement patterns of marine mammals – Sue Barco, Virginia Aquarium and Marine Science Center (ocrab@erols.com).
5. Offshore distribution, abundance and movement patterns of sea turtles – Jack Musick, VA Institute of Marine Science (jmusick@vims.edu) and Ruth Boettcher, VDGIF (ruth.boettcher@dgif.virginia.gov).
6. Colonial waterbirds and shorebirds on Virginia's barrier islands and seaside lagoon system – Alex Wilke, The Nature Conservancy (awilke@tnc.org), Mike Erwin, University of Virginia (rme5g@cms.mail.virginia.edu) and Ruth Boettcher, VDGIF (ruth.boettcher@dgif.virginia.gov).
7. Chincoteague National Wildlife Refuge (CNWR) and its natural resources – Joelle Buffa, CNWR (joelle_buffa@fws.gov).
8. Eastern Shore of VA National Wildlife Refuge (ESVNR) and its natural resources – Pam Denmon, ESVNR (pam_denmon@fws.gov).
9. Back Bay National Wildlife Refuge (BBNWR) and its natural resources – John Gallegos, BBNWR (John_Gallegos@fws.gov).

According to the Department of Game and Inland Fisheries, the following research and information needs can, in part, be addressed with currently available data:

1. Assess the density, abundance and distribution of resident and migrating waterbirds, passerines, marine mammals and sea turtles in the project area throughout the annual cycle (contact the individuals in the preceding paragraph for existing data).
2. Assess the potential for gas exploration/gas production infrastructure and associated lighting to attract unnatural concentrations of benthic and water column dwelling organisms in the project area, which, in turn, may disrupt normal migration patterns (i.e., prolong length of stay in the area) of sea turtles, marine mammals and seabirds that forage on these organisms (gather data from studies and monitoring programs conducted at existing offshore oil production sites).
3. Assess whether gas and oil industry ship traffic will result in an increase in sea turtle and marine mammal vessel strikes (gather data from studies and monitoring programs conducted at existing offshore oil production sites).
4. Assess the effects of drill ship lights on sea turtle hatchlings that may pass through the project area. It is well known that sea turtle hatchlings emerging from the nest cavity exhibit a strong tendency to orient towards the brightest

direction. On developed beaches with beachfront lighting, hatchlings will often crawl towards artificial light sources rather than towards the water. This strong attraction to luminaires elicits a “light trapping” response whereby artificial light fields become the only visible features the turtles perceive. Artificial lights at sea may elicit the same response from sea turtle hatchlings in the water. Of particular concern are those hatchlings that emerge from nests laid on Virginia’s barrier islands that may pass through the project area as they make their way to the Gulf Stream. However, if the drill ships are located in the path of the Gulf Stream, thousands of sea turtle hatchlings could be drawn towards and congregate under drill ship lights. Such a response would not only lead to a disruption in normal movement patterns, it would also result in large number of young turtles falling prey to potentially high concentrations of predators (gather data from studies and monitoring programs conducted at existing offshore oil production sites).

5. Assess the effects of artificial lighting associated with oil and gas drilling activities on all avian species that may pass through the proposed project area or use it as a foraging or stopover site.
6. Gather information on tested methods used to assess potential avian, marine mammal and sea turtle mortality (i.e., locating carcasses at sea, observation methods) in gas exploration project areas and list them in the feasibility study.
7. Determine the full extent of the offshore and land-based infrastructure and support systems needed to conduct oil and gas drilling, including size and number of support vessels, a full description of drill ships, drill equipment, and lighting requirements, the length of time it will take to complete the drilling, time of year the drilling will occur, drilling depths, and location of proposed drill sites, if known. This information should not only be included in the feasibility study, but should be disseminated to all state agencies that are assisting with the study prior to its completion.
8. Determine the extent to which gas exploration and production could affect wildlife resources that reside on Virginia’s barrier islands and Eastern Shore seaside lagoon system (gather data from studies and monitoring programs conducted at existing offshore oil production sites).
9. Determine where the land-based gas production infrastructure will be located (e.g. Hampton Roads, Ocean City).

3. Shoreline and Seafloor Habitats. The DPP (page 86) states that along the Atlantic coast, impacts to sensitive ecological areas such as barrier islands are a concern, particularly from oil spills and marine debris.

3(a) Barrier Islands, Seaside Lagoon System and Wildlife Migration. DGIF provides the following information and discussion on Virginia’s shoreline habitats with respect to barrier islands, seaside lagoon system and wildlife migration.

Barrier Islands

A large portion of Virginia's coastline consists of a 94 kilometer (km) barrier island chain comprised of 14 remote and largely undeveloped islands. With the exception of only a few private in-holdings, the islands are owned and managed by various federal, state and private conservation organizations. The Nature Conservancy of Virginia (TNC) owns the majority of the islands and their associated marshes, which is designated as The Virginia Coast Reserve (VCR). The island chain has been recognized as an International Shorebird Reserve within the Western Hemisphere Shorebird Reserve Network (WHSRN) because of its importance to the survival of over 100,000 shorebirds annually. In addition, the VCR has been designated as a Man and the Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization. Collectively, the barrier islands are an important breeding area for several beach nesting shorebirds including the federally-listed threatened piping plover (*Charadrius melodus*), the state-listed endangered Wilson's plover (*Charadrius wilsonia*), and the American oystercatcher (*Haematopus palliatus*), which is listed as a species of high concern in the U.S. Shorebird Conservation Plan. Also found breeding on the barrier islands are a number of seabird species including the state-listed threatened gull-billed tern (*Sterna nilotica*), least tern (*Sterna antillarum*; a state species of special concern), common tern (*Sterna hirundo*), royal tern (*Sterna maxima*), sandwich tern (*Sterna sandvicensis*), black skimmers (*Rynchops niger*), brown pelicans (*Pelecanus occidentalis*) and several species of gulls. The barrier islands also support a few mixed species wading bird colonies (i.e., herons, egrets, and ibis) and as well as a small breeding waterfowl population. The barrier island chain also represents an important migration stopover and wintering area for shorebirds and waterfowl. On a rare occasion, loggerhead sea turtles nest on the islands along with large numbers of diamondback terrapins (*Malaclemys terrapin*).

Seaside Lagoon System

The Eastern Shore of Virginia's seaside lagoon system, which is located behind the barrier island chain, serves as a globally important migration corridor and stopover site for thousands shorebirds annually, supports numerous species of breeding waterbirds (wading birds, gulls, skimmers, pelicans, and terns), marshbirds, waterfowl, shorebirds, passerines and raptors (including the state-listed threatened bald eagle (*Haliaeetus leucocephalus*) and state-listed threatened peregrine falcon (*Falco peregrinus*), and provides important wintering habitat for a wide variety of seaducks, shorebirds, seabirds and landbirds.

3(c) Subaqueous Lands Impacts. Pursuant to Section 28.2-1204 of the Code of Virginia the Virginia Marine Resources Commission (VMRC) has jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks in the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along natural rivers and streams above the fall line or mean low water below the fall line, a permit may be required.

Dunes Management. Dune protection is carried out pursuant to the Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission (Virginia Code 28.2-1400 through 28.2-1420) with the Virginia Institute of Marine Science serving in a technical advisory role during in the Joint Permit Application (JPA) process.

3(d) Agency Comments. According to VMRC, encroachments in, on or over state-owned submerged land within Virginia's territorial sea associated with any infrastructure, such as pipelines or electrical transmission lines, for projects on the OCS will require permits or a lease from VMRC pursuant to Chapter 12 of Title 28.2 of the Code of Virginia. In addition to permits for encroachments over state-owned submerged land, should any onshore infrastructure related to any lease activity result in a use or development of tidal wetlands or coastal primary dunes/beaches, permits will be required pursuant to Chapters 13 and 14 of the above reference Code Title. As such, the potential near-shore and onshore infrastructure to support activity on the OCS should be considered as part of the environmental documentation for potential leases in federal waters.

4. Coastal Communities. According to the DPP (page 87), since no infrastructure currently exists along the Atlantic, OCS development could result in new pipelines, onshore facilities, and roads.

4(a) Agency Comments. According to the Hampton Roads Planning District Commission, the Hampton Roads harbor and the adjacent coastal waters accommodate a diverse set of uses including commercial and recreational fishing, recreational boating, tourism, extensive military operations, and commercial ship traffic associated with the port of Hampton Roads and the various shipyards in the region. Energy exploration and development in Virginia's coastal waters have the potential to exacerbate use conflicts in the absence of proper planning. To address these potential use conflicts, it is essential that state and local governments be involved in the planning process associated with the development of the mid-2010 to mid-2015 lease program.

In the absence of proper planning, energy exploration and development in Virginia's coastal waters have the potential to exacerbate use conflicts. Therefore, MMS must ensure that OCS activities are consistent with Virginia's energy goals and address potential use conflicts.

4(b) Recommendations. We recommend that MMS closely coordinate future coastal energy plans proposed off the coast of Virginia with Virginia's natural resources agencies, the Department of Mines, Minerals and Energy, the Virginia Coastal Energy Research Consortium" (VCERC) and Virginia Institute of Marine Science (VIMS). The VCERC was established by the Virginia Energy Plan to "serve as an interdisciplinary study, research, and information resource for the Commonwealth on coastal energy issues" with an initial focus on offshore winds, waves, and marine biomass. VCERC is charged with the following responsibilities:

- consult with the General Assembly, federal, state, and local agencies, nonprofit organizations, private industry and other potential users of coastal energy research;
- establish and administer agreements with other universities of the Commonwealth to carry out research projects relating to the feasibility of recovering fuel gases from methane hydrates and increasing the Commonwealth's reliance on other forms of coastal energy;
- disseminate new information and research results;
- apply for grants made available pursuant to federal legislation, including but not limited to research and development calls from the federal government and from other sources; and
- facilitate the application and transfer of new coastal energy technologies.

VCERC is governed by a board which consists of fourteen members, with representatives from eight partner universities and six government and industry partners and is located at Old Dominion University in Norfolk, Virginia. For more information, contact George Hagerman at telephone (703) 387-6030 or email ghagerman@vt.edu

The faculty and staff of VIMS represent a significant body of expertise in the physical, environmental, and living marine resources in the Mid-Atlantic Planning Area. The breadth of this expertise includes predictive wave and current modeling through fishery resource population assessment and management. For additional discussion and information, MMS may contact VIMS (Dr. Roger Mann, telephone (804) 684-7108, or e-mail rmann@vims.edu)

5. Historic and Archaeological Resources. According to the DPP (page 87), most impacts to archaeological resources resulting from routine activities will be avoided, assuming compliance with existing federal, state, and local archaeological regulations and policies. Based on experience gained from the previous oil spills, limited impacts to coastal historic and prehistoric archaeological resources are expected from direct contact with oil, but some impacts could occur during clean up operations.

5(a) Agency Jurisdiction: The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated State's Historic Preservation Office (SHPO), ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulation at 36 CFR Part 800. The preservation act requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding. DHR also provides comments to DEQ through the state EIR review process.

5(b) Agency Comments. DHR notes that survey data for underwater resources on the OCS off Virginia is minimal.

5(c) Recommendations. DHR recommends that MMS consult with DHR during the development of the EIS for the proposed action. Furthermore, DHR requests the opportunity to evaluate survey data for underwater resources on the OCS, both within and outside of Virginia waters.

6. Estimates of Hydrocarbon Resources. The DPP (page 89) states that resource estimates from the 2006 MMS National Assessment of Undiscovered Technically Recoverable Oil and Gas Resources on the OCS form the basis of the MMS evaluation of all 26 planning areas for the Draft Proposed Program. The 2006 Assessment projects the undiscovered, technically and economically recoverable oil and natural gas resources located outside of known oil and gas fields on the U.S. OCS. The assessment considers recent geophysical, geological, technological, and economic information.

6(a) Agency Jurisdiction. The Department of Mines, Minerals and Energy (DMME) Division of Geology and Mineral Resources (DGMR), serving as Virginia's geological survey, generates, collects, compiles and evaluates geologic data, creates and publishes geologic maps and reports, works cooperatively with other state and federal agencies, and is the primary source of information on geology, mineral and energy resources, and geologic hazards for both the mineral and energy industries and the general public. DMME DGMR also provides the necessary geologic support for those divisions of DMME that regulate the permitting of new mineral and fuel extraction sites, miner safety and land reclamation. The DMME Division of Energy works to advance sustainable energy practices and behaviors by increasing the use of proven energy conservation practices in Virginia; fostering growth of emerging and sustainable energy industries and infrastructure; and identifying applications of new and innovative energy technologies in Virginia among other efforts.

6(b) Agency Comments. According to DMME, evaluations of older vintage seismic lines and data from a small number of exploratory wells on the Atlantic Outer Continental Shelf indicate that geological conditions appropriate for the generation and entrapment of oil and natural gas may exist offshore Virginia. Chemical analyses of cuttings from a well drilled along the northern margin of Virginia's offshore Administrative Boundary suggested that source rocks in the area are prone to generate natural gas rather than oil. Through an extrapolation of observed and potential oil and gas play types along the entire Atlantic OCS, the Minerals Management Service has estimated mean values for Undiscovered Technically Recoverable Resources for oil and gas of 3.82 billion barrels of oil (BBO) and 37 trillion cubic feet (Tcf), respectively. The portion of the estimated Atlantic OCS resources that might be attributable to the area within the Program Area for offshore Virginia has been estimated at about 0.130 Bbo and 1.14 Tcf of gas, but is in reality unknown. Anticipated production from the Virginia Program Area is 0.056 BBO and 0.327 Tcf of gas, but is in reality unknown. Anticipated production from the Virginia Program Area is 0.056 BBO and 0.327 Tcf of gas, based on the 2006 National Assessment. To properly evaluate the potential for, and probable location of, oil and gas resources within Virginia's OCS Administrative Boundary, modern seismic data acquisition such as that anticipated by MMS in

response to the proposed action will be required in conjunction with adequate exploratory drilling.

While Virginia's policy, established by legislation enacted in 2006, specifies a 50-mile exclusion zone and limits the Commonwealth's support to natural gas exploration only, infrastructure associated with any successful exploration and production activities could negatively impact hard mineral resources, principally sand and gravel, located within the 50-mile exclusion zone. Many of the hard mineral resources have been previously identified, but potential exists for additional resources to be isolated. The extent to which the sand and gravel deposits may contain economically significant quantities of titanium-bearing minerals or zircon has not been adequately determined. Gas pipelines, foundations, anchorages, or other seafloor facilities constructed without prior evaluation of hard mineral resource occurrences could degrade or remove those resources from possible future exploitation. Consideration should be given to a transparent method of oversight within the MMS that minimizes or eliminates potential exploitation conflicts between oil and gas, hard mineral resources, and any future alternative energy and alternative use programs.

7. Transportation.

7(a) Agency Jurisdiction. The Virginia Department of Transportation (VDOT) provides comments pertaining to potential impacts to existing and future transportation systems.

7(b) Agency Comments. According to VDOT, there should be limited new land-based trips due to construction and operational activities associated with OCS leasing activities considering the availability of workforces and their proximity to the site location.

In the absence of trip generation values associated with proposed activities VDOT assumes that these operations will occur primarily at sea and that they will not significantly impact transportation facilities. Coordination between the ports and the vessels using these ports is essential not to hamper military operations, transport of cargo or maritime activities.

There are several regional projects in VDOT's Six Year plan or 2030 Long Range Plan in region that provide access to the coast line. However, no impacts to these projects are expected